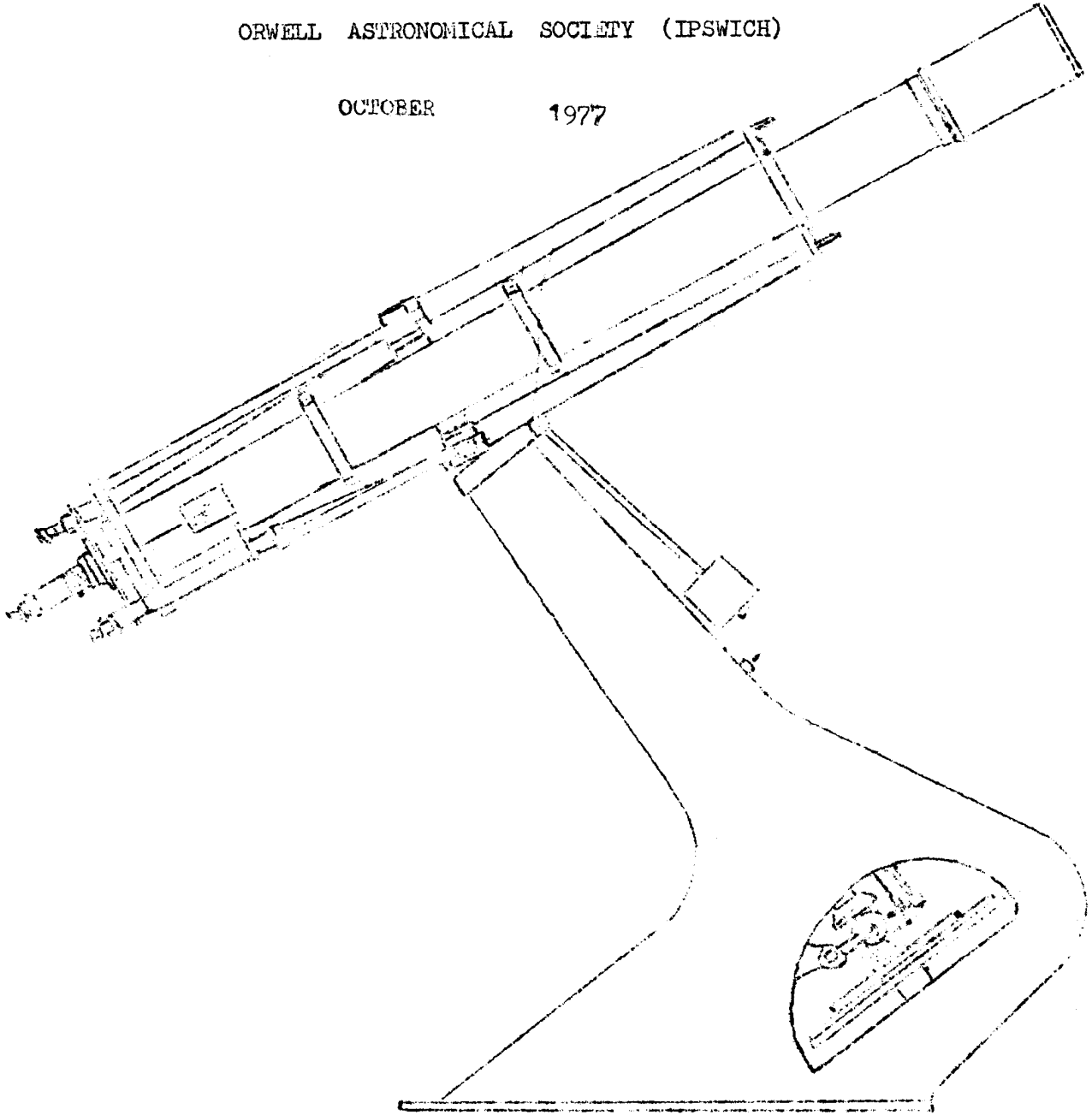


O.A.S.I.

Journal
of the
ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

OCTOBER 1977



Editor: Mr. Mark Howe,
[REDACTED],
BURY ST. EDMUNDS,
Suffolk.
'Phone Bury St. Edmunds [REDACTED]

THE NIGHT SKY as seen from Orwell Park this month.

With winter coming on attention now begins to focus more on the Northern Celestial hemisphere. The Milky Way is almost overhead, running east-west through Cassiopeia and Perseus. In the zenith the Sword-Handle in Perseus is prominent and thickening in the glow of the Milky Way. This object is best viewed through binoculars or a telescope on a very low power to enable both clusters to be seen in the same field. The most notable object in Andromeda is, of course, the Great Galaxy M31 - although it has to be admitted that only a faint, ghostly patch of light can be seen through a telescope. In Aries there is a fine double star, gamma - the faintest of the three major stars - with a separation of 8" and two almost equal 4th. mag. white components.

THE SUN

Sunrise is at 06h10m and Sunset at 1730 at the start of the month (in Virgo) and they change to 0700 and 1630 respectively at the end of the month (in Libra).

THE MOON - Phases

Last Quarter	5d09h21m
New Moon	12d20h31m
First Quarter	19d12h46m
Full Moon	26d23h35m

Occultations

Star	Phase	Mag.	Time
878	R	5.5	4d02h11.4m
2448	D	6.4	16d17h40.8m
3070	D	6.6	20d18h42.5m
* 814	R	5.3	30d23h54.7m

D=disappearance, R=reappearance, * denotes double star. Stars are listed according to Zodiacal Catalogue (ZC) numbers.

THE PLANETS

Mercury is in superior conjunction mid-month so that it will not be seen.

Venus is decreasing in elongation (27° - 20°) but remains constant in magnitude (-3.4) as a morning star.

Mars is in Gemini this month at mag. 0.8-0.4. At the beginning of October it will be only 88% illuminated as viewed from Earth; from now onwards the phase defect will decrease until opposition in January.

Jupiter now rises at around 2000 at mag. -2.0 in Gemini.

Saturn is at mag. 0.8 in Leo. Saturn's eighth satellite, Iapetus, is due to be eclipsed by the planet and its rings on the 19th-20th. The following predictions, which are uncertain by about \pm 15 mins, were made at the Jet Propulsion Laboratory, Pasadena;

Eclipse by:	Ring A	begins	12h25m
		ends	13h55m
Ring B	begins	14h25m	
	ends	17h31m	
Planet	begins	19h31m	
	ends	05h11m.	

Unfortunately Saturn does not rise till 00h50m in England, so that only the final reappearance will be visible. Anyone interested in timing the event (the BAA would like to receive any such observations) should look for an 11th, magnitude object reappearing at position angle 290° , $40''$ from the planet.

Cellulose in Space

The observation of absorption lines in the spectra of interstellar gas clouds can be explained by assuming that they are due to the presence of cellulose. This suggestion comes from Sir Fred Hoyle (controversial as ever) and Professor N.C. Wickramasinha of Cardiff University. Cellulose is a complex substance chemically very similar to starch and which forms the main part of cell walls. The properties of the clouds were compared with those of known cellulose-like materials and found to agree closely, although water-ice and magnesium silicate could also explain the observations (but not fully). If cellulose is present in space it could provide strong evidence for the extra-terrestrial origin of life. (Nature)

EXO BIOLOGY pt. 5

(Many apologies for the long gap between this part and part 4, which appeared in June; this was, unfortunately, completely beyond my control.)

Mars

Mars orbits the Sun at 1.53 AU in 687 days. Its period of rotation is very similar to the Earth's at 24 hrs 37 mins, but it is much smaller than the Earth (6760 km).

As far as surface conditions go, Mars is quite the opposite to Venus, having a very thin atmosphere and low surface temperature. On a hot day at the equator the temperature may reach 30°C, but this rapidly falls after sunset since the atmosphere is inefficient at trapping heat.

The recent Viking landers have failed to produce any actual proof of life on Mars, although the question is still open to debate. Most scientists believe that nothing more than microbes or possibly lichens (symbiotic organisms which are probably the most hardy terrestrial ones) exists on Mars, although Carl Sagan has suggested ("Other Worlds", Bantam Books) that large animals - macrobes - would be best suited to the Martian environment because their small surface area/volume ratio helps them to retain heat. He did not say how they would resist the ultra-violet radiation which is not stopped by the Martian atmosphere or how they would avoid being blown up by their own blood pressure.

In 1877 an Italian astronomer called Giovanni Schiaparelli observed several faint, straight lines on the Martian surface which he called 'canali' or channels. This was mistranslated, perhaps deliberately, by some people to mean man-made canals. As more and more people observed these canals the belief grew up that they were the efforts of a Martian civilization in its death throes to irrigate the equatorial areas of Mars with water from the polar caps. This myth was only finally abandoned in the late '60s when the Mariners flew by Mars and took detailed photographs which showed that the canals do not even exist.

The idea of a Martian civilization which died out because of some catastrophe has stayed with us, however. At the atmospheric pressure of 6 or 7 millibars which exists on Mars, water is a vapour and such a catastrophe as the loss of an atmosphere would remove all liquid water from the surface of the planet. It is possible, however, that a Martian civilization once existed when the atmospheric pressure was 1 bar, as it is now believed the situation was possibly less than a million years ago.

Asaph Hall at the Washington Observatory discovered Mars' two tiny moons, Phobos and Deimos in 1877. The inner moon, Phobos, makes an orbit of its primary once every $7\frac{1}{2}$ hours and hence appears to rise in the West and set in the East. It has been suggested that one or both satellites is an artificial satellite put into orbit by the ancient civilization. (To be continued...)

This comet was discovered on September 4th and is now visible through our 10" at Orwell Park after evening twilight. Here is the ephemeris:-

Date	R.A.	Dec.	Constellation	Magnitude.
September 6th	15hrs 26.5min	+28°59'	Corona Bor	- -
" 7th	15 " 28.1 "	+28°41'	" "	+11 approx.
" 10th	15 " 33.3 "	+27°48'	" "	- -
" 14th	15 " 41.6 "	+26°25'	" "	+10.4
" 19th	15 " 52.6 "	+24°13'	Hercules	- -
" 24th	16 " 04.8 "	+22°49'	" "	9.9
" 29th	16 " 18.1 "	+20°31'	" "	- -
October 4th	16 " 32.7 "	+18°10'	" "	9.4
" 9th	16 " 48.6 "	+15°35'	" "	- -
" 14th	17 " 05.8 "	+12°43'	Ophiuchus	8.9
" 19th	17 " 24.5 "	+09°34'	" "	- -
" 24th	17 " 44.6 "	+06°07'	" "	8.5

The predictions contain some error. Observers should plot the above information on a star atlas such as 'Nortons' and compare the real observed position and magnitude with the predicted observed position and magnitude. Observations should be sent to:

The B.A.A. Comet Section,
c/o Mr. M.J. Hendrie, F.R.A.S.

WEST BERGOLT,
Colchester, Essex.

or you could give him what you have when he gives us a talk on the 14th October at the Friends Meeting House, Fonnereau Road, Ipswich.

A plotted star map is in the Observatory for those who wish to use the Orwell Park Telescope for observing this comet.

VOYAGING TO THE OUTER PLANETS by Charles Radley.

On August 20th voyager 2 departed Cape Canaveral, calling at Jupiter, Saturn, Uranus and Neptune. There were a few problems at first.

Voyager consists of two modules. Firstly the main module (containing the rocket motions, radio communications transmitter/receiver and ariels, navigation systems etc.) Secondly the science module, which contains the T.V. camera and other scientific equipment. The two modules are seperated and connected by a boom.

At launch the boom was folded up, but once in space the boom was extended. Unfortunately a faulty sensor failed to tell mission control that the boom was extended, causing some concern. However, mission control solved the problem by using Voyager 2's T.V. camera. The T.V. camera gave a view of the main module as seen from the end of the boom, and all appeared well.

The T.V. camera was also commanded to photograph a star field: sensors the camera told which way the camera pointed relative to the boom and sun/star sensors on the main module told the orientation of the main module in space. Hence the resulting pictures of the star field were compared with images of the star field expected with a faulty extended boom. They revealed that the boom was indeed fully extended. Mission control is satisfied that it was a false alarm. Incidentally the star pictures were six times better than was expected, which goes well for close up pictures of Jupiter in eighteen months time.

Meanwhile Voyager 1 had a perfect launch on September 5th (the boom sensor worked this time) and all systems are functioning perfectly. It will arrive three minutes late at Jupiter in 1979.

The very first close up pictures of Jupiter came from Pioneer 10 in November 1973. Pioneer 11 also photographed close up pictures of Jupiter during December, 1974 and is now on it's way to Saturn, due to send back pictures in September, 1979. Tracking Pioneer 11's trajectory near Saturn will help mission control decide on the best trajectory to guide Voyager 2 (using Saturn's gravity) towards Uranus and Neptune.

One other probe is scheduled for Jupiter. The Jupiter Orbiter will be launched during 1981/2. As well as sending a capsule into Jupiter's mysterious atmosphere, it will orbit Jupiter for three years taking pictures of Jupiter's atmosphere, the red spot, and Jupiter's larger moons. Some exciting events are now just around the corner!

WHAT WILL VOYAGER TELL US?

The following quote by American Astronomer Dr. Carl Sagan comes from "Newsweek", September 5th, 1977.

"There are not moons like our moon, they're astonishingly different. There's Europa, there's Ganymede, there's Callisto. There's Iapetus, which is six times brighter in one hemisphere than the other.

continued.....

How does that come about? What's that for? There's no, an orange colored moon that leaves a GREAT, DONUT-SHAPED cloud of gas (around Jupiter -C.R.R.) The position of Io somehow governs when Jupiter will make radio bursts toward the Earth. How does that come about? We're going to fly RIGHT THROUGH that stuff and we'll KNOW..... We'll put a dozen pictures INSIDE the Great Red Spot of Jupiter. Well, NO ONE has any idea what's in there. We'll put a dozen pictures along the WIDTH of the rings of Saturn. What are we gonna see? Some totally totally new phenomenon? Nobody has the FOGGIEST idea. There's gonna be just discoveries DROPPING OUT every day"

How can you follow that?!

Charles Radley.

EXPLORING THE OUTER SOLAR SYSTEM:

Progress to date:

<u>PROBE</u>	<u>EVENT</u>	<u>DATE</u>
Pioneer 10	Launch	1972 February (as reported in O.A.S.I. Journal Vol.1 No.1)
Pioneer 11	Launch	1973 March
Pioneer 10	Jupiter Flypast	1973 November (mission ended)
Pioneer 11	Jupiter Flypast	1974 December (retargeted to Saturn)
Voyager 2	Launch	1977 August 20th
Voyager 1	Launch	1977 September 5th

DATES FOR YOUR DIARY.

Voyager 1	Jupiter Flyby	1979 March 5th (retargeted to Saturn)
Voyager 2	Jupiter Flyby	1979 July 10th (retargeted to Saturn)
Pioneer 11	Saturn Flyby	1979 September, mission ends
Voyager 1	Saturn Flyby	1980 November 12th (mission ends)
Voyager 2	Saturn Flyby	1981 August 21st (retargeted to Uranus)
Jupiter Orbiter	Launch	1981/2 winter
Jupiter Orbiter	Jupiter orbit entry	1983 (end)
Jupiter Orbiter	Mission Ends	1985 approx.
Voyager 2	Uranus Flyby	1986 January 30th
Voyager 2	Neptune Flyby	1990 mission ends.

Information for the above article and table taken from:

"Aerospace Daily", "New Scientist" and "Flight International"

Charles Radley.

The Sporadic Meteor Count on the 3rd September was attended by five members and a total of thirteen meteors were seen. This was the only clear night so far this year where we had clear skies.

THIS MONTH sees one of the major showers of the year, the ORIONIDS.

Max. is on October 21st, normal limits October 16th to 26th. Z.H.R. at max. = 30 Radiant R.A. 0624hrs, Dec. +15°. The shower has multiple meteors with fine trains and observing this shower is very favourable this year.

There will be a meteor watch to observe this shower on SATURDAY OCTOBER 22nd at 8.30p.m. Meet outside the Golf Hotel, Foxhall Road, Ipswich at 8.30p.m. irrespective of weather conditions. We hope in the near future to arrange another venue than Foxhall Heath for our meteor counts, and full details will appear in the November Journal.

For the benefit of those who will be at this meteor count here are some details of the Moon and twilight.

	<u>Age of Moon</u>	<u>Moon rise U.T.</u>	<u>Moonset U.T.</u>	<u>Twilight ends</u>	<u>Twilight begins</u>
				<u>U.T.</u>	<u>U.T.</u>
Oct. 20th	7	14.0		17.8	5.7
" 21st	8	14.5	0.2	"	"
" 22nd	9	15.0	1.4	"	"

All times are that of the Greenwich meridian.

MINOR SHOWERS THIS MONTH.

October 11th - Xi Arieds, Normal limits October 2nd to 16th

" 21st - Epsilon Geminids Normal limits October 14th to 26th

Both these two showers are very weak with only about one or two meteors every hour.

N.A.S.A. TURNS A DEAF EAR TO THE MOON.

At the present time of writing (5th September), one Voyager is on its way to Jupiter and Saturn, and another is about to go on its way, and space scientists have earned Congressuional funding for a Jupiter orbiter and an orbital space telescope in the 1980s. But U.S. space science is not a continual run of engineering and financial triumphs! Last week Houston's Johnson Space Centre announced that after the end of this month that it will be no longer able to monitor data radioed from the instruments left on the Moon by the Apollo astronauts becuase N.A.S.A. cannot afford it.

Actually, the instruments are really the root of the problem because they have lasted longer than expected. A seismometer is still returning data from the Apollo 12, Pete Conrad and Alan Bean in 1969 (Nov.). Another seismometer and charged particular experiment returning data, as is two more seismometers, a magnetometer, a Lunar heat flow device, and a solar wind sampler.

All these instruments will still be radioing readings back to Earth, possibly for another four years, but after 30th September, 1977 there will be nobody at the other end to receive their messages.

Information from 'The New Scientist'

U.F.O. HOTELS?

My teleoccult friend Daedalus has been musing on stable regions in gravitational fields, like the Lagrangian Points' in the Earth - Sun system advocated as sites for space colonies. He reasons that similar stable points must exist in the gravitational field formed by any collection of mutually gravitating objects, such as the Sun and nearby stars. And just as the solar system Lagrangian Points accumulate small asteroids so the local stellar system will harbour at it's stable points 'interstellar junk heaps', where,over the aeons the debris of space will have concentrated. So Dreadco astrophysicists, armed with the positions and velocities of the nearest one-hundred stars, are computing where the local stable regions should be, so as to look for interstellar junk heaps. They will be too diffuse and cold to shine by their own light, but should be detectable by this obscuring effect on the stars beyond them. Once located, these 'junk heaps', presumably bits of solid in a thin miasma of gas, will enrich astronomy enormously. They will be dense enough for their gas to be analysed spectroscopically by its absorbtion of the light from the stars behind them. Distant stars are such perfect point sources of light that, Daedalus estimates, composition changes over a few centimetres could be resolved as the 'junk heap' drifted in front of the light source star.

Similarly micro eclipses would occur as solid fragments in the 'heap' drifted across one star after another and again from the resulting fluctuations in light intensity the size and shape of the fragments could be inferred with this precision. If star trekking civilizations exist, they must surely use interstellar 'junk heaps' in space providing materials for repairs, fuel and food..... continued

..... without the hazardous business of retrorocketing down onto planetary surfaces.

So Daedalus awaits with peculiar interest the first micro eclipse reconstructions of objects in interstellar junk heaps. If they look like empty gas cylinders, abandoned radar transmitters, or opened baked-bean cans, he will know that we are not alone in space.

David Barnard.

OTHER NEWS by R.M. Cheesman.

THE SPACE SHUTTLE Orbiter (122feet long by 78feet wide) which goes up like a rocket and comes down like an airplane had its first subsonic flight on 12th August. Apart from a slight malfunction, one of the four imboard computers failed at the moment of separation, the flight was troublefree.

At 22,100 feet above the Mojave Desert the aerospace navigator Fred W. Haise, veteran of Apollo 13, detonated the explosive attachment bolts which seperated the Orbiter from the Jumbo 747 jet that was carrying it.

The entire flight lasted 5mins 41 secs after the Orbiter seperated from the Jumbo jet. Haise reported that the Orbiter had 'very good roll control, more like a fighter than a big aircraft.' At least three more free landing tests are scheduled this Autumn.

Full report in July's 'New Scientist' copy of which is in the Observatory

STONEHENGE TO CLOSE.

After about 4,000 years the ancient British Observatory (or whatever it is) is to closed to the public. The site has been open to the public for the last twenty years as were many of the hundreds of henge monuments in the British Isles.

Today Stonehenge is one of Briton's leading tourist attractions and there can be few people in the civilised world who have not heard of it. The site is visited by over 700,000 people a year who tramp over the site wearing away the ground where no grass has grown for many years and the monument itself is being eaten away by visitors feet which is wearing away the ancient banks and ditches.

The actual closure was scheduled to take place this year but because of local pressure the closure date has been postponed and the Department of the Enviroment is thinking again in terms of just roping off the central 30 metres of the monument. The public will still be able to see the central part and still be able to walk over the surrounding banks and ditches.

Information from J.A.S. 'Hermes' Copy of book and full report in the Observatory Library.

THE HURWICH RAY.

An interesting report in the Daily Telegraph on Saturday August 27th 1977 was passed to me about a ray which was supposed to have been used in the Israeli war. This ray-gun was developed by Mr. Sidney Hurwich a former Toronto appliance repairer who has had to 'take things easy' after undergoing surgery. This devise, which is still basically classified information, can freeze 'moving parts or anything'. It can stop clocks, engines and anything moving, but the range of the ray is classified information. To me this was a very interesting report in as much as when people claim that they has seen flying objects their clocks, watches and the car engines had stopped. Could there be any be any more reason to substantiate reports of flying objects which shopped watches and engines in the light of this report, because if we can make one on Earth, spacemen from other planets with superior intelligence should also be able to make a 'gun' of even greater power?

Copy of article from the 'Daily Telegraph' in the Observatory Library.

SOCIETY NEWS by R.M. Cheesman.

I have recieved a letter from Mr. Nigel Gage thanking all those members and the Society for donating towards a present on his wedding day. Also he would like to thank those members who attended the wedding.

LECTURES

During October we start our winter series of lectures at the Friends Meeting House, Fonnereau Road, Ipswich. During the coming winter months we have arranged talks on Comets, U.F.Os. Saturn, Meteors and many other subjects which will be of interest to all.

These lectures are free and anyone can come along.

continued.....

LECTURES.. continued.

The first of these lectures is given by Mr. M. Hendrie, F.R.A.S. who has talked to us twice before and attracted a large gathering, especially when he talked about that famous non-event 'Comet Khoutek' This illustrated talk is:

'The Development of methods and techniques for observing comets'

on FRIDAY 14th OCTOBER

at

The Friends Meeting House

Fonnersea Road,

IPSWICH

starting at 8p.m. sharp.

Everybody welcome, admission FREE

Please display the poster advertising this event (which should be at the back of this month's Journal) in a prominent place to advertise this talk. Further posters for libraries, etc. can be obtained through Mr. R.M. Cheesman.

If you would like more than the copy of posters advertising events please contact Mr. Cheesman who will send more when the Journals are dispatched to you.

LONDON TRIP.

We still have one or two spare seats on the 'bus 'The White Tornado' for London on SATURDAY 1st OCTOBER, 1977. We will be going to the Science Museum and other places of interest which will be sorted out on the 'bus. Those members who wish to come and be dropped off somewhere are welcome to come and make the numbers up and we will pick them up on the way back.

Names A.S.A.P to Mr. Cheesman.

MEET OUTSIDE RADIO ORWELL (Electric House) at 8.a.m. -home by about 10p.m.
ASTRONOMY FOR BEGINNERS

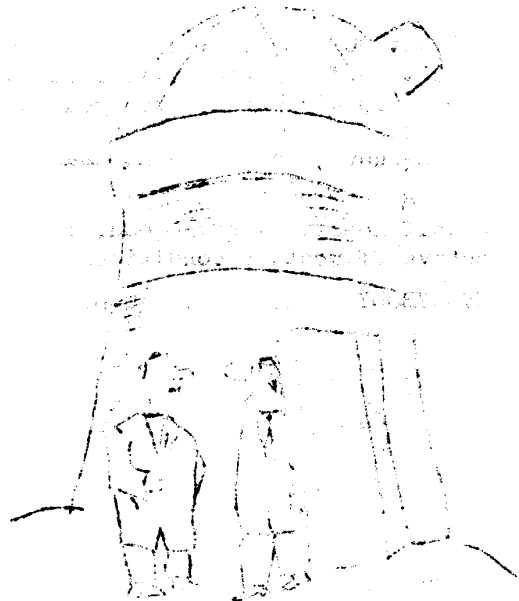
Again this year it is proposed to hold 'open meetings' for beginners and those who wish to know more about astronomy. These meetings will be held at the Observatory so that meetings can take place irrespective of weather conditions. If the weather is bad someone will talk on a particular aspect of astronomy or give an illustrated talk. If you would like to have a talk on a particular aspect of astronomy please contact Mr. Cheesman who is arranging these meetings.

These meetings will be held at the Observatory on the first Wednesday of each month starting on WEDNESDAY 5th OCTOBER, 1977 at 7p.m.

METEOR COUNTS

So far this year we have only had one good meteor count, and that one was only a sporadic one. On all the other occasions when a meteor count was held the weather was against us and as the year went on our numbers at the counts grew less. Mr. David Barnard is always at the meteor counts irrespective of weather conditions and so are quite a few of our members. If you are coming to a meteor count please do not be put off by the weather (and the cold) as these meetings are a good time for members to get together and have a general 'chin-wag' about astronomy.

The venue for these counts at the moment is still on Foxhall Heath, meet outside the Golf Hotel, Foxhall Road, Ipswich at the time specified, but in the very near future hope to change our meteor count site.



J. Cheesman

Well, there is at least one good thing about our hobby - it's always looking up!

ORWELL ASTRONOMICAL SOCIETY (IPSWICH)

programme for October, 1977.

AT ORWELL PARK OBSERVATORY, NACTION.

WEDNESDAYS from 7p.m.

ASTRONOMY FOR BEGINNERS from 7p.m. Director Mr. R.M. Cheesman

These meetings which will be held on the first Wednesday each month are open to all members and non-members) who wish to come along. No admission charges!

WEDNESDAYS from 7p.m. Solar, Lunar & Planetary Section

Director Mr. R.M. Cheesman, [REDACTED], Ipswich

12th October

19th "

26th "

THURSDAYS from 8p.m. Double Stars Section

Director Mr. D. Bearcroft, [REDACTED], Ipswich 'Tel. [REDACTED]

13th October

27th "

FRIDAYS from 8p.m. Variable Stars Section.

Director Mr. R.S. Manning, [REDACTED], Ipswich 'Tel. [REDACTED]

28th October.

TUESDAYS from 8p.m. Planetary Section (this is a new section which has just started)

Director Mr. J. Deans, [REDACTED], Capel St. Mary 'Tel. GT. WENHAM [REDACTED]

and Mr. J. Hood, [REDACTED], Ipswich.

4th October

18th "

1st November.

OTHER MEETINGS.

LECTURE. Illustrated talk on 'The Development of Methods and techniques for observing comets' by Mr. M. Hendrie, F.R.A.S. at the Friends Meeting House, Fonnereau Road, Ipswich on

FRIDAY 14th OCTOBER, 1977 at 8p.m.

ADMISSION FREE

EVERYBODY WELCOME.

LONDON TRIP.

London trip on SATURDAY 1st OCTOBER leaving 'Radio Orwell' (Electric House at 8a.m. should be home by 10p.m. A few seats still left so hurry and contact Mr. R.M. Cheesman, 3 Tasmania Road, Ipswich to reserve your seat.

METEOR COUNT Director Mr. D. Barnard, [REDACTED], Ipswich 'Tel. [REDACTED].

ORIONIDS METEOR COUNT on SATURDAY 22nd OCTOBER from 8.30p.m.

Meet outside the Golf Hotel, Foxhall Road, Ipswich

irrespective of weather conditions.

ANYBODY AND EVERYBODY WELCOME TO COME TO THESE MEETINGS.

Information for new members

O.A.S.I. stands for 'Orwell Astronomical Society (Ipswich)

Affiliations The O.A.S.I. is affiliated to the following organisations:

The British Astronomical Association
The Junior Astronomical Society
The Federation of Astronomical Societies

What O.A.S.I. offers:

1. NEWSLETTER: All members receive the monthly Journal. Each member is asked to supply a dozen stamps each year to ease and speed the distribution of the Monthly Journal, not to mention saving a fortune in postage

THE JOURNAL PROVIDES:

News of O.A.S.I. meetings, observation sessions, outings, etc; the night sky that month, news and discussions of astronomical research and space exploration, other items of local and national astronomical interest, advertisements etc.

Members are invited to submit articles for publication in the Journal.

2. THE OBSERVATORY: At Orwell Park School Nacton, nr Ipswich, Suffolk, the Society uses and maintains the 250mm refractor which was built in 1872. The history of the observatory is published in the leaflet 'Orwell Park Observatory' published by O.A.S.I., copies of which are in the Observatory.

There are frequent evening O.A.S.I. meetings at the Observatory supervised by authorised members. All members and their guests are invited to attend these nights which are notified in the Journal.

The committee often arranges for outside organisations (Boy Scouts, mens clubs, etc) to visit the Observatory. Any member wishing to invite a club or organisation to visit the Observatory must have the visit authorised by the Committee.

If you would like the Observatory opened up specially for you to do some observational work you must ask the Committee, who will arrange for two authorised keyholders to look after you that evening. Under no circumstances may the Observatory be opened without at least TWO authorised keyholders present, the Committee will take a series view if this standing rule is breached. This rule is a result of safety, insurance, and fire regulations. There is a great deal of expensive, delicate and dangerous equipment in the Observatory, unsupervised visitors are therefore a danger to themselves as well as others.

If you have any enquiries relating to the use of the Observatory you should ask a Committee member, who will always be willing to help.

3. LECTURES During the winter months the O.A.S.I. organises monthly public lectures on Friday evenings, at The Friends Meeting House, Fonnereau Road, Ipswich. A specialist, either professional or amateur, is invited to talk on a subject of astronomical interest. At the end of the lecture time is allowed for members of the audience to ask the speaker questions. There is no entrance fee to these lectures but to defray expenses collection tins are distributed at the lectures. The Committee are open to suggestions for speakers, but it must be remembered that travelling expenses limit the distance from which a speaker can be invited.

Also the Committee arranges for our members to give talks to other organisations which are arranged through the Committee.

4. LIBRARY: The O.A.S.I. library is in the Observatory Club Room. Members are allowed to draw books provided that the books are available for loan. Certain reference books and magazines (which are marked) are not available for loan. If you wish to borrow books you must make an entry in the Library Log Book which is in the bookcase. The use of the Library is free to members.

Most of the books are donated by members and other benefactors. If you have any spare books or magazines etc. and you would like to donate them to the Society please contact Mr. R.M. Cheesman. The Library contains a star atlas which goes down to the 14th magnitude. Also in the Club Room is a selection of current editions of: 'Hermes', 'Spectrum', 'The Astronomer' 'The F.A.S. Journal' and the B.A.A. Journal'. It is hoped to increase the number of Journals when more funds become available.

5. TELESCOPES

The Society has one 5" reflector to lend out to members and it is hoped in the very near future the Committee will authorise another reflector to be lent out to members. If you would like to borrow one of these instruments please apply to the Secretary or the Chairman.

6. OBSERVING EXPEDITIONS

As well as making astronomical observations with the Orwell Park Telescope and their own instruments members may come on the observing expeditions. So far these are of two kinds: regular Saturday evening meteor watches which are held at the moment on Foxhall Heath, and occasional trips further afield to observe grazing occultations. Also during the winter months at the Observatory on the first Wednesday in each month from 7p.m. special meetings are held for beginners in astronomy which are held under the directorship of Mr. R.M. Cheesman. All members are invited to these meetings as well as outside people and many of our members organise talks and observational sessions. All meetings of the Society are advertised in the monthly Journal.

7. OUTINGS

The O.A.S.I. organises outings to other Societies and daytrips to places of astronomical interest. A fee is charged to cover the coach hire. All members and their fiends are invited to come on these events which are always very enjoyable. Details of planned outings are given well in advance in the monthly Journal.

8. YOUR CONSTITUTIONAL RIGHTS

The day to day running of the Society is done by the Committee but any suggestions or comments which you would like voiced should be addressed to the Secretary and they will be discussed at the following Committee Meeting. The Annual General Meeting (A.G.M.) of the O.A.S.I. is held at Orwell Park on the first Friday of each year. Advance notice is given in the Journal.

At the A.G.M. all emembers are entitled to a vote. A family with one family membership is entitled to one shared vote. The Officers of the Committee are elected by secret vote at the A.G.M. All paid up members have the right to stand on the Committee provided that they are nominated and seconded by two other paid up members of the Society and that they are voted onto the Committee at the A.G.M.

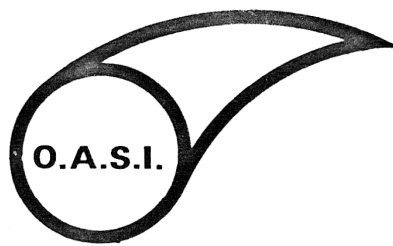
The Agenda of the A.G.M. is arranged at the preceding Committee Meeting, all items for inclusion on the Agenda must be submitted to the Honourary Secretar before or at that meeting.

9. YOUR CONTRIBUTION

By paying you annual subscription you are contributing to the O.A.S.I., there is no obligation to do any more. There are many other ways in which members can contibute if they wish. The O.A.S.I. is run entirely by unpaid volunteers in their spare time. Helpers are always needed. A great deal of manpower is always needed to run the Society and for holding Club Nights at the Observatory. Also at the annual Open Day a great deal of help is needed in preparations both on the day and in the preparation. If you can help in anyway please contact the Committee. Help is always needed to paint and repair the Observatory, and on the Open Day help is needed to park cars, escort visitors, tansport telescopes loaned by members who have no transport, prepare and sell refreshments and souvenirs, selling raffle tickets and much more.

If you would like to play a more active part in the Society's affairs please contact the Secretary or the Chairman.

Original material Mr. C. Radley
edited by Mr. R.M. Cheesman.



Orwell Astronomical Society (Ipswich)
presents
a lecture entitled

**DEVELOPMENTS OF
METHODS AND
TECHNIQUES FOR
OBSERVING
COMETS**

by

Mr. Michael J Hendrie
deputy director – B.A.A. comet section

at

The Friends Meeting House
Fonnereau Road, Ipswich

on

Friday 14th. October 1977
at 8p.m.

REFRESHMENTS

ADMISSION FREE

Secretary: Mr. M. Stow,
13 Ladywood Road,
Ipswich.